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10/030,779	05/24/2002	Walter Roethlingshoefer	10191/2180	6397

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NEW YORK, NY 10004

EXAMINER

CAMERON, ERMA C

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 05/23/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/030,779

Applicant(s)

ROETHLINGSHOEFER ET AL

Examiner

Erma C. Cameron

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 17-32 is/are pending in the application.
- 4a) Of the above claim(s) 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Claim 32 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 9, filed 4/18/2003.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 17-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Page 2, lines 15-33, page 3, line 31 and elsewhere discloses that the substrate is esterified. However, page 4, line 35 states that the reaction is an etherification.

However, Hawley's Condensed Chemical Dictionary (twelfth edition, see attached) defines an ester as a compound derived from an acid in which a hydrogen has been replaced by

Art Unit: 1762

an organic radical, and defines an ether as an organic compound that has an oxygen interposed between two carbon atoms. It is not clear that either esterification or etherification adequately defines the chemical reactions that are occurring in the claimed invention.

4. Claims 17-19 and 22-31 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for treating the substrate with a siloxane, does not reasonably provide enablement for any material being used to treat the substrate. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

The specification does not support the use of materials other than siloxanes.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 18, 21, 27 and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claim 18: it is not clear if the treating step of claim 18 is the same or different from the esterifying step of claim 17.

b) Claim 21: it is not clear if the % are weight or volume.

c) Claim 27: there is no antecedent basis for surface contacted.

d) Claim 30: there is no antecedent basis for solution constituents not crosslinked.

There is no indication in claim 27 that the heat treatment resulted in crosslinking.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 17-20, 22-23 and 27 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by White, Proceedings of the IEEE, 57(9), pp 1610-1615, 1969.

White teaches dipping or spraying a metallized ceramic with a solution of a siloxane that is then cured by heat onto the surface (see Abstract, Figure 2, p 1612), for mechanical and moisture protection.

9. Claims 17-20 and 27 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Wong (5213864).

'864 teaches coating a hybrid integrated circuit containing ceramic and metal with a siloxane solution and then crosslinking it with heat (2:14-26, Claim 1).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 21, 24-26 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over White, Proceedings of the IEEE, 57(9), pp 1610-1615, 1969.

White is applied here for the reasons given above.

White teaches that the siloxanes are diluted in a solvent, with a "suitable dilution" (p 1612), and cured at 120-300 degrees C step cure.

It would have been obvious to one of ordinary skill in the art to have optimized the solution characteristics and cure characteristics through no more than routine optimization.

White teaches that excess solvent is removed by heating (p 1612). It would have been obvious to one of ordinary skill in the art to have substituted other means of removing the solvent such as by wiping or blow-off, with the expectation of equivalent results.

White does not teach that non-crosslinked material is removed. It would have been obvious to one of ordinary skill in the art to have incorporated such a conventional step in the White process.

Art Unit: 1762

***Conclusion***

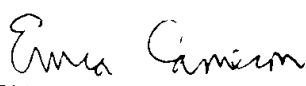
12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erma C. Cameron whose telephone number is 703-308-2330.

The examiner can normally be reached on 8:30-6:00, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7718 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
**ERMA CAMERON**  
**PRIMARY EXAMINER**

Erma C. Cameron  
Primary Examiner  
Art Unit 1762

May 16, 2003

*Hawley's*  
*Condensed Chemical*  
*Dictionary*

*TWELFTH EDITION*

*Revised by*  
Richard J. Lewis, Sr.

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CIP

**ESR.** See spin resonance.

**essential.** (1) Containing the characteristic odor or flavor, (i.e., the essence) of the original flower or fruit: an essential oil, usually obtained by steam distillation of the flowers or leaves or cold-pressing of the skin. (2) As applied to certain amino acids, fatty acids, and vitamins, this term is used by biochemists to mean that the compound in question is a necessary nutritional factor that is not synthesized within the body of the animal and thus must be obtained from external sources. Eight amino acids are classified as essential on this basis.

See also amino acid.

**essential oil.** A volatile oil derived from the leaves, stem, flower, or twigs of plants, and usually carrying the odor or flavor of the plant. Chemically, they are often principally terpenes (hydrocarbons), but many other types also occur. Essential oils (except for those containing esters) are unsaponifiable. Some are nearly pure single compounds, as oil of wintergreen, which is methyl salicylate. Others are mixtures, as turpentine oil (pinene, dipentene), and oil of bitter almond (benzaldehyde, hydrocyanic acid). Some contain resins in solution and are called oleoresins or balsams.

**Properties:** Pungent taste and odor, usually nearly colorless when fresh but becoming darker and thick on exposure to the air; optically active,  $d$  0.850–1.100; soluble in alcohol, carbon disulfide, carbon tetrachloride, chloroform, petroleum ether, and fatty oils; insoluble in water except for individual constituents of some oils which may be partially water-soluble, resulting in a loss of these constituents during steam distillation.

**Derivation:** (1) By steam distillation, (2) by pressing (fruit rinds), (3) by solvent extraction, (4) by maceration of the flowers and leaves in fat and treating the fat with a solvent, (5) by enfleurage.

**Use:** Perfumery, flavors, thinning precious-metal preparations used in decorating ceramic ware.

See also terpeneless oil and specific entries. Further information can be obtained from the Essential Oil Association of U.S.

**Note:** Many essential oils are now made synthetically for a wide variety of fragrances and flavoring agents. Use of these synthetics is increasing because of a shortage of natural products.

**ester.** An organic compound corresponding in structure to a salt in inorganic chemistry. Esters are considered as derived from acids by the exchange of the replaceable hydrogen of the latter for an organic radical. The usual reaction is that of an acid (organic or inorganic) with an alcohol or other organic compound rich in OH groups.

Esters of acetic acid are called acetates, and esters of carbonic acid carbonates.

See also fatty ester.

**ester gum.** Hard, semisynthetic resin produced by esterification of natural resins (especially rosin) with polyhydric alcohols (principally glycerol but also pentaerythritol). Flash p 375F (190C). Combustible.

**Grade:** By color, also as gum rosin or wood rosin.

**Use:** Paints, varnishes, and cellulosic lacquers.

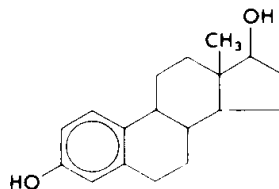
**esterification.** The process of producing an ester by reaction of an alcohol with an acid.

**ester interchange.** (transesterification; interification). The reaction between an ester and another compound with exchange of alkoxy or acyl groups to form a different ester.

**ester number.** (1) The number of milligrams of alkali necessary for saponification of the glyceryl esters in a fat or oil. (2) The difference between acid number and saponification number.

**"Esteron" [Dow].** TM for a series of weed- and brush-control products; they are formulated esters of 2,4-D and 2,4,5-T.

**estradiol.** CAS: 50-28-2.  $C_{18}H_{24}O_2$ . A female sex hormone. It occurs in two isomeric forms,  $\alpha$  and  $\beta$ .  $\beta$ -estradiol has the greatest physiological activity of any naturally occurring estrogen. The  $\alpha$ -form is relatively inactive. Commonly used preparations are the benzoate, dipropionate, and valerate, as well as ethinylestradiol.



**Properties:** ( $\beta$ -form): White or slightly yellow, small crystals or crystalline powder, odorless, mp 173–179C, stable in air. Almost insoluble in water; soluble in alcohol, acetone, dioxane, and solutions of alkali hydroxides; sparingly soluble in vegetable oils.

**Derivation:** Isolated from human and mare pregnancy urine, commercial synthesis from cholesterol or ergosterol.

**Grade:** NF ( $\beta$ -form).

**Hazard:** A carcinogen (OSHA).

**Use:** Medicine (estrogenic hormone).

**estragole.** (chavicol methyl ether; methyl chavicol). CAS: 140-67-0.

cium ethylsulfate solution, and distilling on a water bath.

**Hazard:** Toxic by ingestion and inhalation. Flammable, dangerous fire risk. TLV: 0.5 ppm in air. Use: LPG odorant, adhesive, stabilizer, chemical intermediate.

**Note:** Tomato juice is reported to deodorize materials contaminated with this compound.

**ethanethiolic acid.** See thioacetic acid.

**ethanoic acid.** See acetic acid.

**ethanol.** See ethyl alcohol.

**ethanolamine.** (MEA; monoethanolamine; colamine; 2-aminoethanol; 2-hydroxyethylamine). CAS: 141-43-5.  $\text{HOCH}_2\text{CH}_2\text{NH}_2$ .

**Properties:** Colorless, hygroscopic, viscous liquid; ammoniacal odor; strong base; miscible with water, methanol, acetone; d 1.0179 (20/20C); bp 170.5C; mp 10.5C; vap press 0.48 mm Hg (20C); flash p 200F (93.3C) (OC); bulk d 8.5 lb/gal (20C). Combustible.

**Derivation:** Reaction of ethylene oxide and ammonia gives a mix of mono-, di-, and triethanolamines.

**Grade:** Technical, NF.

**Hazard:** Skin irritant. TLV: 3 ppm in air.

**Use:** Scrubbing acid gases ( $\text{H}_2\text{S}$ ,  $\text{CO}_2$ ), especially in synthesis of ammonia, from gas streams; non-ionic detergents used in dry cleaning, wool treatment, emulsion paints, polishes, agricultural sprays; chemical intermediates, pharmaceuticals, corrosion inhibitor, rubber accelerator.

**ethanol formamide.**  $\text{HOCH}_2\text{NHOCH}_2$ .

**Properties:** Somewhat viscous liquid; miscible with water, alcohol, and glycerol; compatible with polyvinyl alcohol, many cellulosic and natural resins; bp 143C (2.5 mm Hg); fp approximately -72C; d 1.170 (25/4C); flash p 347F (175C). Combustible.

**ethanol hydrazine.** See  $\beta$ -hydroxyethylhydrazine.

**ethanolurea.**  $\text{NH}_2\text{CONHCH}_2\text{CH}_2\text{OH}$ .

**Properties:** Liquid, solidification point 71-74C. Formaldehyde condensation products are permanently thermoplastic and water soluble. As increasing amounts of simple urea are mixed with ethanolurea, the condensation products gradually change from pliable film-forming resins into the brittle types. Thus, almost any degree of water solubility and flexibility may be obtained in the final resin. The modified resins formed with ethanolurea are compatible with polyvinyl alcohol, methyl cellulose, cooked starch, and other water-dispersible materials.

**"ETHANOX" [Ethyl].** TM for hindered phenolic antioxidants.

**ethaverine.** (1-[(3,4-diethoxyphenyl)methyl]-6,7-diethoxyisoquinoline; isoquinoline).

$\text{C}_{24}\text{H}_{29}\text{NO}_4$ . CAS: 486-47-5.

**Properties:** Crystals with mw 395.48, 99-101C. Insoluble in water, very soluble in hot alcohol, slightly soluble in ether and chloroform.

**Use:** Antispasmodic drug.

**ethchlorvynol.** (1-chloro-3-ethyl-1-penten-4-yn-3-ol;  $\beta$ -chlorovinyl ethylethynylcarbinol). CAS: 113-18-8.

$\text{HC}=\text{CCOH}(\text{C}_2\text{H}_5)\text{CH}=\text{CHCl}$ .

**Properties:** Colorless to yellow liquid, pungent aromatic odor, darkens on exposure to light and to air, d 1.068-1.071, refr index 1.4765-1.4800 (25C), bp 173-181C, immiscible with water, miscible with most organic solvents.

**Grade:** NF.

**Hazard:** Abuse may cause addiction.

**Use:** Medicine (sedative).

**ethene.** See ethylene.

**ethenol.** See vinyl alcohol.

**ethephon.** See 2-chloroethylphosphonic acid.

**ether.** A class of organic compounds in which an oxygen atom is interposed between two carbon atoms (organic groups) in the molecular structure, giving the generic formula ROR. They may be derived from alcohols by elimination of water, but the major method is catalytic hydration of olefins. Only the lowest member of the series, methyl ether, is gaseous; most are liquid, and the highest members are solid (cellulose ethers). The term "ether" is often used synonymously with "ethyl ether" and is the legal label name for it.

**Hazard:** The lower-molecular-weight ethers are dangerous fire and explosion hazards; when containing peroxides they can detonate on heating.

**Use:** See ethyl ether; polymer, water-soluble; ethylene oxide; propylene oxide; diethylene glycol; ethylcellulose; polyether.

**Note:** An illogical and archaic use of the term "ether" survives in such names as petroleum ether.

See also crown ether.

**ethereal.** Descriptive of a liquid characterized by high volatility, often a mixture of ethyl ether and an essential oil.

**ethical drug.** A prescription drug. See also drug.

*Erma Cameron*

ERMA CAMERON  
PRIMARY EXAMINER